Amendments to the Claims:

The listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claims 1-39 (canceled)

Claim 40 (currently amended and withdrawn): A method of performing an assay to test for the presence and/or amount of a nucleic acid sequence of interest in a sample, comprising: contacting the sample with the sample receiving zone of a lateral flow assay device according to claim ~~1~~ 45, so as to cause a nucleic acid amplification reaction in the presence of the sequence of interest; and detecting, directly or indirectly, the product/s of the amplification reaction in the detection zone of the lateral flow assay device.

Claim 41 (withdrawn): The method according to claim 40, wherein the amplification reaction comprises a SMART amplification reaction involving the sequence of interest in the formation of a three way junction with two probe molecules.

Claim 42 (withdrawn): The method according to claim 40, wherein the method comprises the step of performing a nucleic acid extraction step in an extraction zone of the assay device.

Claim 43 (withdrawn): The method according to claim 42, wherein the extraction step comprises contacting nucleic acid in the sample with dodecyl trimethyl ammonium bromide ("DTAB") and subsequently contacting the extracted nucleic acid/ DTAB mixture with cyclodextrin.

Claim 44 (currently amended and withdrawn): The method of making a lateral flow assay device according to claim ~~1~~ 45 comprising: forming a porous matrix comprising an amplification zone and a detection zone, said amplification zone being in liquid flow

communication with a sample receiving zone, the sample receiving zone comprising one or more reagents immobilized or releasably bound thereon so as to perform a nucleic acid extraction step on a nucleic-acid containing sample contacted with the sample receiving zone.

Claim 45 (new): A lateral flow assay device to test for the presence and/or amount of a nucleic acid sequence of interest in a sample comprising:

(a) a sample receiving zone for contacting the device with a sample to be tested;

(b) a porous matrix which, at a proximal end, is in liquid communication with the sample receiving zone;

(c) an extraction zone for extraction of nucleic acid from the sample;

(d) a nucleic acid amplification zone in liquid communication with the sample receiving zone, said extraction zone and nucleic amplification zone being located on the porous matrix; and

(e) a detection zone for detecting the product/s, directly or indirectly, of a nucleic acid amplification reaction performed in the nucleic acid amplification zone, said detection zone being in liquid communication with the amplification zone; whereby liquid applied to the sample receiving zone flows along the device passing sequentially through the extraction zone and amplification zone to the detection zone by capillary action through the porous matrix

Claim 46 (new): The lateral flow assay device according to claim 45, wherein the nucleic acid amplification comprises an isothermal amplification reaction.

Claim 47 (new): The lateral flow assay device according to claim 45, wherein the device comprises one or more reagents releasably bound on the porous matrix.

Claim 48 (new): The lateral flow assay device according to claim 47, wherein the one or more reagents releasably bound comprise one or more reagents required to perform the nucleic acid amplification reaction.

Claim 49 (new): The lateral flow assay device according to claim 45, comprising one or more reagents immobilized on the porous matrix.

Claim 50 (new): The lateral flow assay device according to claim 49, wherein the one or more immoblized reagents comprise an amplicon-specific capture moiety.

Claim 51 (new): The lateral flow assay device according to claim 45, comprising a probe comprising nucleic acid releasably bound or immobilized on the porous matrix.

Claim 52 (new): The lateral flow assay device according to claim 45, wherein the sample receiving zone comprises reagents suitable to perform a nucleic acid extraction step on a sample applied to the sample receiving zone.

Claim 53 (new): The lateral flow assay device according to claim 45, comprising dodecyl triethyl ammonium bromide or FTA paper.

Claim 54 (new): The lateral flow assay device according to claim 45, comprising means for interruption of flow, alteration of rate flow, or alteration of flow path, of a liquid along the porous matrix within the device.

Claim 55 (new): The lateral flow assay device according to claim 54, comprising means for altering the relative positions of two or more portions of the porous matrix, so as to affect the rate of flow of liquid from one portion to another.

Claim 56 (new): The lateral flow assay device according to claim 45, wherein the amplification reaction comprises a SMART amplification reaction involving the sequence of interest in the formation of a three way junction with two probe molecules.

Claim 57 (new): An assay kit for performing an assay to test for the presence and/or amount of a nucleic acid sequence of interest in a sample, the kit comprising a lateral flow assay device according to claim 45, and a supply of at least one reagent required to perform the assay.

Claim 58 (new): The assay kit according to claim 57, comprising a supply of carrier liquid.

Claim 59 (new): The assay kit according to claim 58, wherein at least one reagent is provided dissolved and/or suspended in the carrier liquid.

Claim 60 (new): The lateral flow assay device according to claim 45, wherein the porous matrix is selected from the group consisting of cellulose, cellulose derivatives and nylon.

Claim 61 (new): The lateral flow assay device according to claim 60, wherein the porous matrix is provided with a backing material.